

# Great Circle Spherical Distance and Course

Lat1 = latitude of origin      Lat2 = latitude of Destination  
Long1 = longitude of origin      Long2 = longitude of Destination

Drad = Distance in radians

$$\text{Drad} = \text{ARCCOS} \left( \text{SIN}(\text{Lat1}) * \text{SIN}(\text{Lat2}) + \text{COS}(\text{Lat1}) * \text{COS}(\text{Lat2}) * \text{COS}(\text{Long2} - \text{Long1}) \right)$$

$$\text{Distance in nautical miles} = \frac{10800 * \text{Drad}}{\pi}$$

Course from Origin to Destination

$$\text{course} = \text{ATAN} \left( \frac{\text{SIN}(\text{Long1} - \text{Long2})}{\text{COS}(\text{Lat1}) * \text{TAN}(\text{Lat2}) - \text{SIN}(\text{Lat1}) * \text{COS}(\text{Long2} - \text{Long1})} \right)$$

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